

Public Comment CE142-16 WILLIAMS-B :

Proponent : Jeremiah Williams, representing U. S. Department of Energy (jeremiah.williams@ee.doe.gov) requests Approve as Modified by this Public Comment.

Replace Proposal as Follows:

2015 International Energy Conservation Code

SECTION C202 DEFINITIONS

GENERAL DEFINITIONS

OCCUPIED-STANDBY MODE: When a zone is scheduled to be occupied and an occupant sensor indicates zero population within the zone.

C403.2.6.2 Occupied Standby Controls Zones serving only rooms that are required to have occupant sensor lighting controls per section C405.2.1 and that have space occupancy classifications from Table 403.3.1.1 of the *International Mechanical Code* where the "area outdoor airflow rate in the breathing zone" is equal to 0.06 cfm/ft² shall comply with all of the following not more than 5 minutes after all rooms in that zone enter an *occupied-standby mode*.

1. Active heating setpoint shall be setback not less than 1°F, and
2. Active cooling setpoint shall be setup not less than 1°F, and
3. All airflow supplied to the zone shall be shut-off whenever the space temperature is between the active heating and cooling setpoints

Exceptions:

1. Multiple zone systems without DDC zone controls.
2. Where the zone supply airflow rate minus any makeup or outgoing transfer air requirement is not more than 200 cfm (95 L/s).
3. Where the system is installed for the sole purpose of providing makeup air to meet exhaust requirements and system operation is interlocked with the exhaust fan.
4. Zones in Group H-1, H-2, H-3, I-2, and I-3 occupancies.

Commenter's Reason: This proposal replaces the original proposal with a proposal that reduces ventilation in vacant zones during occupied-standby mode that occurs during normally scheduled hours when a space is vacant. A definition is added for "occupied-standby mode."

The approach is similar to the occupancy sensor control in the original proposal, except that it only applies in zones where all rooms are equipped with occupancy sensors for lighting control, allowing the occupancy sensor to be shared between systems. This can reduce the cost of the proposal.

Rather than limit the proposal to high density spaces greater than 150 square feet (as in the original proposal), it applies to all zones with lighting occupancy sensors (with exceptions). The savings is proportional to supply air, so the high density people requirement is not needed. Zones with net airflow below 200 cfm are excepted, so the 150 square foot limit (as in the original proposal) is not needed.

The cost and savings are very similar to the cost effectiveness discussed in the original reason statement, and the cost is expected to be less, as only spaces with lighting occupancy sensors are included.

This public comment adds a new ventilation section rather than modifying the DCV section, for three reasons:

1. The requirements are clearer in a separate section,
2. It can be applied in addition to DCV in high-density spaces, saving more energy, and

3. This approach aligns better with a proposal under consideration for ASHRAE Standard 90.1.

There are exceptions provided for makeup air units and zones with limited net supply air as in the original proposal. Only zones with low standby contaminants and sensitive populations are required to shut off air, including spaces where the area outdoor airflow rate in Table 403.3 of the IMC is 0.06 cfm/ft^2 . Other spaces with a higher area ventilation requirement, such as nail salons and art classrooms, would not be included in the requirement. This matches the ventilation shutoff allowance created by addendum P to ASHRAE standard 62.1-2013. Medical, correctional and hazardous use groups are excepted.

While there is a thermal control element to the controls, as in the original proposal, the minor standby adjustments in thermostat setting are intended to allow the ventilation control to function correctly, not achieve significant savings through space heat loss or gain reductions. The control requirements start within 5 minutes after entering occupied standby mode. For DDC systems where occupancy is a direct system input, this can start immediately after the space is vacant. Where the signal comes from a lighting occupant sensor with a 20 minute time out, the installation would still comply, as the definition of *occupied standby mode* is when the occupant sensor indicates the space is vacant.

The cost impact and cost effectiveness of this revised proposal is expected to be the same as outlined in the original proposal.

Note: Renumber parking garage ventilation control to C403.2.6.3 and insert this new section after existing demand controlled ventilation (C403.2.6.1).

Bibliography: See original proposal.